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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/824,980      | 04/03/2001  | Donald J. Williams   | 3174-000008         | 1370             |

27572 7590 10/07/2003

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| EXAMINER |
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DEPUMPO, DANIEL G

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

3611

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

|                   |                 |  |
|-------------------|-----------------|--|
| Application No.   | Applicant(s)    |  |
| 09/824,980        | WILLIAMS ET AL. |  |
| Examiner          | Art Unit        |  |
| Daniel G. DePumpo | 3611            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 8 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Kliman et al. in view of Applicant's Admitted Prior Art (APA) and further in view of Nishiyama et al. '153.

See the rejection of paper number 6, mailed 6/18/02.

3. Claims 9-13, 16-19, 22 and 23 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kliman, APA and Nishiyama as applied to claims 1-5 and 8 above, and further in view of McCann and Ackermann.

As set forth above, the combination teaches substantially all that is claimed, but the references do not discuss the "slot fill". McCann, however, discloses the benefits and desirability of increasing the "slot fill" (e.g. col. 5, lines 55-67) in a "switched reluctance motor with indirect position sensing" (title). McCann does not specifically disclose the actual percentages of slot fill desired. Ackermann also discloses the benefits and desirability of high slot fills, and discloses that motor slot fills approaching 70% are common (col. 2, line 16) in the prior art. Ackermann further discloses that their method obtains slot fills "substantially higher than the slot fills obtainable with prior art techniques" (col. 6, lines 42-45) which results in decreased cost and stack height (col. 7, lines 61-67). It would have been obvious to use greater slot fill amounts since McCann teaches related benefits such as improved thermal characteristics

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and reduced vibration in a switched reluctance motor. Moreover in view of Ackermann, to use a slot fill greater than 70% would have been obvious to decrease cost and stack height.

4. Claim 6 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kliman, APA and Nishiyama et al. as applied to claims 1-5, 8-13, 16-19 and 22 above, and further in view of Trago et al.

See the rejection of paper number 6, mailed 6/18/02.

5. Claims 14 and 20 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kliman, APA, Nishiyama, McCann and Ackermann as applied to claims 9-13, 16-19, 22 and 23 above, and further in view of Trago et al.

As set forth above, the combination teaches substantially all that is claimed, but does not teach the use of end caps. However, Trago discloses a similar motor including end caps 25 and 26. It would have been obvious to include end caps, as taught by Trago, to protect the stator.

6. Claim 7 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kliman, APA and Nishiyama et al. as applied to claims 1-5, 8-13, 16-19 and 22 above, and further in view of Mitsui.

See the rejection of paper number 6, mailed 6/18/02.

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7. Claims 15 and 21 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kliman, APA, Nishiyama, McCann and Ackermann as applied to claims 9-13, 16-19, 22 and 23 above, and further in view of Mitsui.

As set forth above, the combination teaches substantially all that is claimed, but does not teach the use of deformations to hold the stator plates together. However, Mitsui discloses a similar motor including deformations 17 (i.e. fig. 6). It would have been obvious to include such deformations, as taught by Mitsui, to define interlocking means between successive laminations (col. 3, line 20) of stator plates. To form the deformations by using slits would have been an obvious design expedient.

8. Applicant's arguments filed August 22, 2003 have been fully considered but they are not persuasive.

Applicant argues (page 5) that the proposed combination of Kliman and Nishiyama was not obvious. It is not entirely clear, what applicant means by urging that the "combination was not obvious", however it is presumed that applicant is arguing that there is no motivation to combine the teachings of these references. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine these references has been expressly provided by Nishiyama, as stated in the rejection. As set forth in the rejection, the motivation to make the stator of segment assemblies having the shape taught by Nishiyama is

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so that the winding may be formed easily (Nishiyama col. 4, line 49). Moreover, the rejection notes that the use of stator segments is extremely common in the motor art.

Applicant notes that switched reluctance motors are old and that motors with segmented stators are old. Apparently applicant considers that it would not have been obvious to combine these features because the technology is old. This argument is not persuasive because it has been held that “contentions that the reference patents are old is not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references”. *In re Neal*, 179 USPQ 56 (CCPA 1973). Applicant has not established that the art tried and failed to solve the same problem. Moreover, it is noted that the applied references to Kliman (patented January 23, 1990) and Nishiyama (patented April 11, 2000) are not “old”.

Regarding the use of sensorless control techniques, applicant notes that there are known problems relating to these techniques. However, applicant concedes that such techniques are known in a switched reluctance motor (spec., page 4, lines 6-17). The examiner considers that it would have been obvious to use sensorless control techniques to “reduce manufacturing costs and misalignment problems” (spec., page 4, lines 6 and 7). Applicant discusses the problems associated with direct sensor systems, and then states that there is significant interest in the sensorless approach (remarks page 12). Applicant seems to be providing strong reasons why one of ordinary skill in the art would have looked to sensorless systems. Moreover, since applicant’s specification specifically discloses that the prior art recognizes the benefits of the sensorless approach (page 4, lines 6 and 7), it is not understood how applicant can now argue that this modification would not have been obvious.

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At page 13, applicant argues that since Kliman does not address, or recognize, the problem of making the stator easier to wind, it is unclear why one would look to Nishiyama. The examiner notes, however, that the standard of obviousness under 35 U.S.C. 103 is not based on what problems Kliman would recognize. Instead, the standard is based on what one of ordinary skill in the art would recognize. The fact that Kliman might not have been concerned with winding the stator would not prohibit one of ordinary skill in the art from looking to Nishiyama regarding winding of the stator.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding the slot fills, McCann discloses the benefits and desirability of increasing the "slot fill" (e.g. col. 5, lines 55-67) in a "switched reluctance motor with indirect position sensing" (title). McCann does not specifically disclose the actual percentages of slot fill desired. Ackermann also discloses the benefits and desirability of high slot fills, and discloses that motor slot fills approaching 70% are common (col. 2, line 16) in the prior art. Ackermann further discloses that their method obtains slot fills "substantially higher than the slot fills obtainable with prior art techniques" (col. 6, lines 42-45) which results in decreased cost and stack height (col. 7, lines 61-67). It would have been obvious to use greater slot fill amounts since McCann

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teaches related benefits such as improved thermal characteristics and reduced vibration in a switched reluctance motor. Moreover in view of Ackermann, to use a slot fill greater than 70% would have been obvious to decrease cost and stack height.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel G. DePumpo whose telephone number is 703 308-1113. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 703 308 1113. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1113.

A handwritten signature in black ink, appearing to read 'Daniel G. DePumpo', written in a cursive style.

Daniel G. DePumpo  
Primary Examiner  
Art Unit 3611

dgd  
10/6/03